WSRC-RP-97-232

Savannah River Site

NEPA/CERCLA

Integration Guidance

SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA

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Authorized Derivative Classifier

SAVANNAH RIVER SITE NEPA/CERCLA INTEGRATION GUIDANCE

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ACRONYMS

BRA	Baseline Risk Assessment
BSRI	Bechtel Savannah River Incorporated
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CMS	Corrective Measures Study
CX	Categorical Exclusion
DCF	Dose Conversion Factors
DOE	U. S. Department of Energy
DOE-EAD	Department of Energy-Engineering and Analysis Division
DOE-ERD	Department of Energy-Environmental Restoration Division
DOE-SR	U. S. Department of Energy-Savannah River Operations Office
DOE-HQ	U. S. Department of Energy-Headquarters
DOJ	U. S. Department of Justice
DQO	Data Quality Objective Process
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	U. S. Environmental Protection Agency
FFA	Federal Facility Agreement
FONSI	Finding of No Significant Impact
FS	Feasibility Study
MAP	Mitigation Action Plan
NEPA	National Environmental Policy Act
NOI	Notice of Intent
NONA	Notice of NEPA Approval
PRC	PRC Environmental Management, Inc.
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RI	Remedial Investigation
ROD	Record of Decision
SB	Statement of Basis
SCDHEC	South Carolina Department of Health and Environmental Control
SE	Site Evaluation
USC	United States Code
VIA	NEPA Values Impact Assessment
WSRC	Westinghouse Savannah River Company
WSRC-EPD	Westinghouse Savannah River Company - Environmental Protection Department
WSRC-EREC	Westinghouse Savannah River Company - Environmental Restoration Environmental Compliance
WSRC-SRTC	Westinghouse Savannah River Company - Savannah River Technology Center

I. EXECUTIVE SUMMARY

DOE continues to attempt to integrate the NEPA and CERCLA processes in the cleanup of its federal facilities consistent with DOE Orders 5400.1 and 451.1 and the Secretarial Policy on NEPA to minimize document preparation time and reduce costs.

This NEPA/CERCLA Integration Guidance provides for an early project planning and scoping process during which appropriate NEPA/CERCLA questions are asked in a decision-based flow process. This guidance outlines an integrated document that would meet both NEPA and CERCLA requirements where CERCLA is clearly the driver. The NEPA Values Impact Assessment integrated referenceable document would reduce costs significantly by eliminating the need to prepare an EA or EIS for major CERCLA actions by demonstrating that NEPA values have been addressed.

A vast majority of the CERCLA actions involving environmental restoration have been categorically excluded under NEPA. SRS has 467 potential waste units in the FFA process, some of which may require integrated NEPA evaluation. The integration of NEPA values into CERCLA documentation is anticipated to occur: (1) at the CERCLA Work Plan development stage (WSRC, 1993) when multiple waste units are being considered together under CERCLA (e.g., Waste Management Activities for Groundwater Protection at the Savannah River Plant EIS-DOE/EIS-0120); (2) when facilities are being considered for Decontamination and Decommissioning (D&D); (3) where there may be a potential CERCLA implication at a selected waste site (e.g., L-Lake drawdown with the shutdown of the Site's river water system); and (4) when proposed Remedial Actions differ from those evaluated in existing NEPA documents.

SRS developed a more efficient and cost effective approach to integrating NEPA and CERCLA processes that minimizes conflicts. Following this guidance would decrease scheduling and funding conflicts, eliminate redundant public involvement, set specific definitions and goals for human health and ecological assessments, and allow for cooperative data collection which would significantly reduce time and costs of document development and satisfy the regulatory requirements of both laws.

II. INTRODUCTION

The purpose of this SRS NEPA/CERCLA Integration Guidance is to provide guidance in integrating the two processes, to the degree practical, through a decision-based flow path process which minimizes scheduling and funding conflicts and achieves more efficiency and cost savings. A history of the SRS NEPA/CERCLA Integration experience is provided in Appendix A.

The Department of Energy (DOE) has sought to integrate the National Environmental Policy Act (NEPA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) processes in the cleanup of its federal facilities. This is because integration would be beneficial and cost effective for the cleanups (DOJ, 1995). The Council on Environmental Quality (CEQ) stressed that Federal Agencies should integrate NEPA values into the CERCLA process when feasible and appropriate (DOJ, 1995).

The DOE NEPA/CERCLA integration policy found in DOE-HQ and SRS Implementing Procedure 400, Chapter 450.1 discusses that where DOE remedial actions under CERCLA trigger the procedures set forth in NEPA, it is the policy of DOE to integrate the procedural and documentation requirements of CERCLA and NEPA, wherever practical. The instrument for this integration will be during the pre-work plan characterization and the Remedial Investigation (RI) / Feasibility Study (FS) process. This process will be supplemented, as needed, to meet the procedural and documentation requirements of NEPA (DOE, 1989; Ziemer, 1991).

A DOE Secretarial Policy on NEPA was issued on June 13, 1994, to streamline the NEPA process and minimize the cost and time for document preparation and review. The policy directed the need to integrate NEPA values into CERCLA documents (DOE, 1994; O'Leary, 1994).

DOE Order 451.1 (NEPA Compliance Program) states that "it is DOE's policy to incorporate NEPA values, such as analysis of cumulative, off-site, ecological, and socioeconomic impacts, to the extent practicable, in DOE documents prepared under CERCLA" (DOE, 1995).

III. THE LAWS AND REGULATORY REQUIREMENTS

National Environmental Policy Act (NEPA)

NEPA (42 USC 4321 *et seq.*), signed into law on January 1, 1970, and amended twice in 1975 and once in 1987 and 1996, established the national policy on the environment. NEPA requires Federal agencies to evaluate the effect their proposed actions would have on the quality of the human environment and to document that effect in a detailed statement, Environmental Assessment (EA) or Environmental Impact Statement (EIS). Further, NEPA requires agencies to consider the environmental impacts of alternatives during the planning and decisionmaking stages. DOE views NEPA as a valuable early planning tool, an opportunity to improve the quality of the Department's decisions, and as a vehicle to build public trust. CEQ issued regulations for implementing the procedural provisions of NEPA (40 CFR Parts 1500-1508) in 1978. DOE issued DOE Order 5440.1 for application of NEPA regulations at DOE facilities. DOE Order 451.1 replaced DOE Order 5440.1 in 1995 (DOE, 1995). Previously published DOE NEPA guidelines were consolidated into a regulation (10 CFR Part 1021), which became effective on May 26, 1992 (DOE, 1992), and was amended on August 8, 1996 (DOE, 1996).

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

The U. S. Environmental Protection Agency (EPA) administers CERCLA (42 USC 9601 *et seq.*), also called Superfund, which provides a statutory framework for responding to releases or threats of releases of hazardous substances and remediating hazardous substance releases. CERCLA was signed into law in 1980. CERCLA and Executive Order 12580, "Superfund Implementation," require Federal facilities to comply with the Act. DOE is the CERCLA lead response agency for releases or threats of releases at the SRS.

Section 107(f) of CERCLA and Executive Order 12580 require Federal officials to act on behalf of the public as trustees for natural resources. Because DOE is the SRS land manager, it is also the primary Federal Natural Resource trustee. Natural Resource Trustees are responsible for evaluating natural resource injuries and for assessing damages related to such an injury. If there is a release or threat of a release from the SRS, DOE must notify and coordinate its trustee activities with other state and Federal "co-trustees." As a CERCLA lead response agency, DOE can conduct a preassessment to determine the ecological threat posed by an actual or possible release of a hazardous substance (43 CFR Part 11).

In accordance with Section 120 of CERCLA, DOE has entered into an interagency agreement with EPA and South Carolina Department of Health and Environmental Control (SCDHEC) (EPA, 1993). This Federal Facility Agreement (FFA), effective August 16, 1993, directs the comprehensive remediation of the SRS in accordance with CERCLA and Resource Conservation and Recovery Act (RCRA), and thus integrates the CERCLA response action process and the corrective measures provisions of RCRA Sections 3004(u) and 3004(v). The FFA also provides specific direction for the implementation of the CERCLA natural resource damage assessment provisions at the SRS.

IV. SRS NEPA/CERCLA PROCESSES

NEPA Process

The NEPA process at SRS begins with the preparation of an Environmental Evaluation Checklist (EEC) which describes a proposed action and identifies any potential environmental effects. An evaluation of any potential effects of the proposal is conducted and Westinghouse Savannah River Company (WSRC) makes a recommendation as to the appropriate level of NEPA review to DOE-Savannah River (SR) based upon the EEC and other relevant information. The levels of NEPA review are: (1) CX, (2) EA, and, (3) EIS. The processing of CXs is handled exclusively by WSRC and DOE-SR. EA and EIS recommendations are submitted by WSRC to DOE-SR for review and concurrence. Final authority to determine the need to prepare an EA has been delegated to the DOE-SR Site Manager by DOE-Headquarters (HQ). Therefore, DOE-HQ concurrence is not required prior to the initiation of an EA preparation process by SRS. If DOE-SR concurs on an EIS recommendation from WSRC, this has to be forwarded to DOE-HQ for a final determination. The preparation of EAs are normally delegated by DOE-SR to WSRC.

In accordance with CEQ requirements, DOE-SR prepares EISs for major SRS actions. WSRC is responsible for providing technical information documents and other supporting documentation and services as needed during the preparation of the EIS. Following completion of the NEPA review process, a final decision regarding the proposal is issued in the form of a ROD for an EIS, a Finding of No Significant Impact (FONSI) for an EA not resulting in an EIS, or a CX. Upon receipt of this decision in the form of a Notice of NEPA Approval (NONA), the project sponsor is free to implement the appropriate action. A Mitigation Action Plan (MAP) may be drafted and implemented as part of the appropriate action (Mayer, 1996).

CERCLA Process

The CERCLA process entails the identification, assessment, and remediation of waste units. Potential waste units are assessed by the site evaluation process to determine if further investigation is necessary (Note: Although the ER Program is referred to as the CERCLA Process, per the FFA, it is actually the process that integrates CERCLA and RCRA 3004 (u). A work plan approach is scoped with EPA/SCDHEC. A RCRA Facility Investigation/Remedial Investigation (RFI/RI) work plan is prepared which details the proposed characterization of the unit. The data are then evaluated and a RFI/RI/BRA (Baseline Risk Assessment) report is performed to determine the need for remedial action.

If warranted by the RFI/RI/BRA report, A Corrective Measures Study/Feasibility Study (CMS/FS) that fully evaluates and develops remedial action alternatives to prevent and/or mitigate the release and/or migration of the release of hazardous substances, pollutants, or contaminants at and from the waste unit are conducted. Treatability studies of screened technologies may be performed to provide additional information for technology and alternative evaluation.

A preferred alternative that meets the RCRA/CERCLA requirements is identified in the Statement of Basis/Proposed Plan (SB/PP) and provided to the public for comment along with a draft RCRA permit modification. The selected alternative for remediation of the waste unit is identified in the ROD, and RCRA permit modification, which describes the technically and legally binding parameters of the remedy. After approval of the ROD and RCRA permit modification, remedial activities are initiated during which the actual construction of the remedy or implementation phase of site cleanup occurs (WSRC, 1993).

V. NEPA/CERCLA INTEGRATION

DOE in its NEPA/CERCLA integration guidance (Ziemer, 1991) estimated that between 75 and 90 percent of remedial actions would be expected to be covered by Categorical Exclusions (CX) under NEPA Implementing and Procedures and Guidelines, 10 CFR Part 1021 (DOE, 1992). Shedrow et al. (1993) estimated that approximately 75 percent of the CERCLA pre-Record of Decision (ROD) activities applicable to environmental restoration could receive CXs under NEPA review at SRS. Since 1993, most of the CERCLA actions involving environmental restoration have been categorically excluded.

SRS has over 467 potential waste units in the FFA to process, some of which may require integrated NEPA evaluation. The integration of NEPA values into CERCLA documentation is anticipated to occur: (1) at the CERCLA Work Plan development stage (WSRC, 1993) when multiple waste units are being considered together under CERCLA (e.g., Waste Management Activities for Groundwater Protection at the Savannah River Plant EIS - DOE/EIS-0120); (2) when facilities are being considered for Decontamination and Decommissioning (D&D); (3) where there may be a potential CERCLA implication at a selected waste site (e.g., L-Lake drawdown with the shutdown of the Site's river water system); and (4) when proposed Remedial Actions differ from those evaluated in existing NEPA documents.

Figure 1 shows a comparison between the steps necessary to complete both the NEPA EIS and CERCLA processes at SRS. Both processes have scoping, public involvement, EPA/SCDHEC review, and a ROD. The CERCLA process has additional steps involving feasibility and treatability studies, etc. and involves several regulatory input reviews. The NEPA process can take from one day to a week for a CX, 4-6 months for an EA, and 15-24 months for an EIS, whereas, the CERCLA process generally takes about 38 months to complete when a full RI/BRA (including collection and evaluation of data) and FS are needed to support a final ROD. The CERCLA process can be significantly shortened if steps (e.g., data collection or evaluation of remedial alternatives) are not necessary.

The determination of the need for integration of NEPA and CERCLA should be developed early in the planning/scoping stages of a project (e.g., Scoping/Work Plan stage for a CERCLA action). Figure 2 presents the recommended decision-based flow path to follow (by Step number) to evaluate the need for the integration of the two processes for Site proposed actions or projects.

Step 1 Define the proposed action/project in as much detail as possible, including potential impacts.

Step 2 ANSWER the Questions:

- Is the proposed action (or any alternatives) a remedial action under CERCLA?
- Does the proposed action (or any alternatives) affect (directly or indirectly) any known waste unit or Site Evaluation (SE) area?
- Is the unit listed on the FFA?
- Has this unit received, or believed to have received, releases of hazardous substances from a facility?
- Has there ever been a release or suspended release of hazardous materials from the area under consideration for action?
- Will the proposed action (or any alternatives) change exposure pathways at a CERCLA site(s)?
- Is the proposed action a D&D action?
- Does the action take place where a waste unit or SE area remedial action took place?
- Would any likely NEPA commitments or MAP affect (directly or indirectly) any CERCLA site(s)?

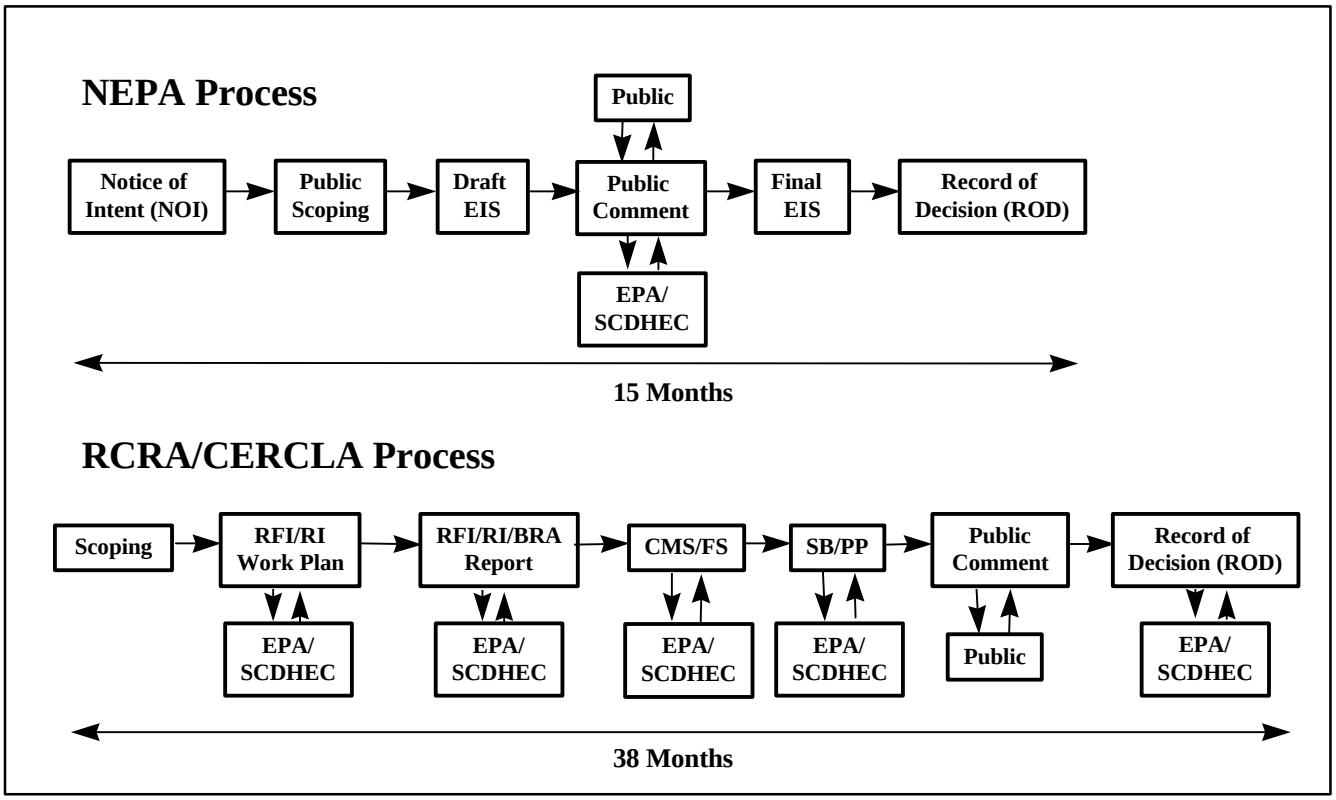

Figure 1 NEPA/CERCLA Process Comparison

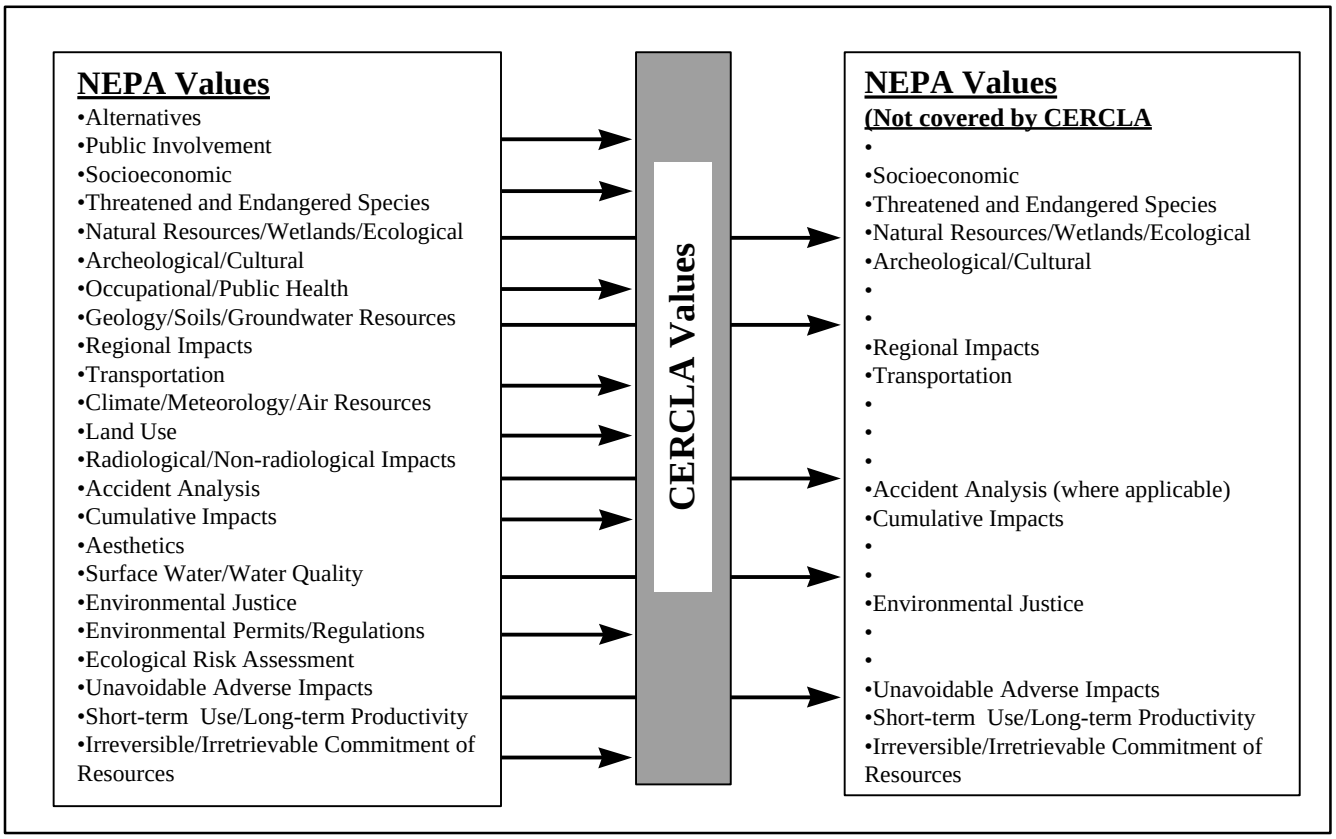

Figure 2 NEPA Values Not Addressed in CERCLA Documents

Step 3 If all the answers are "no", there are no CERCLA issues and therefore, no need for NEPA/CERCLA integration. Proceed with the NEPA Process:

- Fill out Environmental Evaluation Checklist per 3Q 5.1.
- Make NEPA determination (CX, EA, or EIS)
- Prepare NEPA documentation.
- Receive NONA.

If any answer is "yes", indicating clear CERCLA involvement, there is potential for NEPA/CERCLA integration.

Proceed with NEPA process as above. If the NEPA determination is a CX, receive NONA and NEPA process is complete. Go forward with CERCLA action. If the NEPA determination is an EA or EIS, proceed to Step 5.

Step 4 If, after starting the NEPA process, CERCLA issues arise, stop and re-evaluate the level of NEPA required and evaluate the degree of integration needed.

Step 5 Consult with the WSRC Site NEPA Coordinator (input and concurrence by WSRC legal counsel also required) to work through the following questions regarding whether the NEPA and CERCLA processes should or can be separated:

- Is there a clearly defined advantage in writing separate NEPA and CERCLA documents?
- Can the action be scoped so as not to impact or preclude any remediation action eventually to be taken under CERCLA?
- Can data collection be amply funded, timed properly to reduce redundancy, and certifiable to satisfy both NEPA and CERCLA?
- Does the action have to take place prior to CERCLA implementation (e.g., operational decision)?
- Can the action be taken without triggering a CERCLA action (automatic or forced)?
- Can DOE reach a negotiated agreement with regulators that results in separate NEPA and CERCLA actions?
- Can any part of the action be separated from the NEPA process so a NEPA action can be completed (e.g., impacts addressed under permits, delay issues until future CERCLA analysis)?

- If it is agreed that they can be separated (majority of "yes" answers), proceed to complete the NEPA process and reach a NEPA decision (FONSI, or ROD).

- If it is agreed that they cannot be separated, proceed to Step 6.

Step 6 Incorporate NEPA values into the CERCLA document by preparation of a referenceable NEPA VIA so as to satisfy NEPA requirements and be acceptable to CERCLA regulatory reviewers.

Figure 2 represents the NEPA/CERCLA integration process. The level of NEPA documentation would be determined using NEPA criteria (CX, EA, or EIS). If the level of NEPA documentation is determined to be a CX, NEPA is complete. If not, a NEPA Values Impact Assessment (VIA) would be prepared that is of appropriate detail to satisfy EA or EIS requirements, including evaluation of the impacts of each CERCLA alternative in a bounding-type assessment. The assessment would not make any choices between alternatives.

The NEPA VIA would replace the need for an EA or EIS and would cover only those values which are not adequately addressed by a CERCLA document (typically an RI/FS) (Figure 3). The NEPA VIA would be incorporated as a reference and not be part of the CERCLA document. In this way, it would satisfy NEPA requirements, would be used as a reference in the CERCLA decision, and would not hinder the CERCLA regulatory review and approval process. The NEPA VIA could be completed and approved in 2-6 months depending upon the impact assessment information available for each of the NEPA values. A summary statement would be included in the body of the CERCLA document (e.g., RI/FS) which would explain why the NEPA VIA satisfies NEPA requirements. The NEPA VIA would reduce NEPA costs significantly by eliminating the need to prepare an EA or EIS for major CERCLA actions by demonstrating that NEPA values have been addressed. A typical CERCLA action which would result in a CX is described as an example in Appendix B.

VI. BENEFITS OF THE INTEGRATION PROCESS

Following this guidance would reduce scheduling and funding conflicts, eliminate redundant public involvement, set specific definitions and goals for human health and ecological assessments, and allow for cooperative data collection which could significantly reduce time and cost of compliance.

Schedule Reduction

Figure 1 shows that currently there is about a one and one-half year's difference in the final decision process for NEPA (15 months to an EIS ROD and up to 38 months to a CERCLA ROD depending upon the degree of remediation necessary) at SRS. Implementation of the NEPA VIA concept into a proposed action where CERCLA is clearly the driver will not hold up the CERCLA process, since NEPA requirements would be satisfied very early, (e.g., within 2-6 months), saving several months. The early

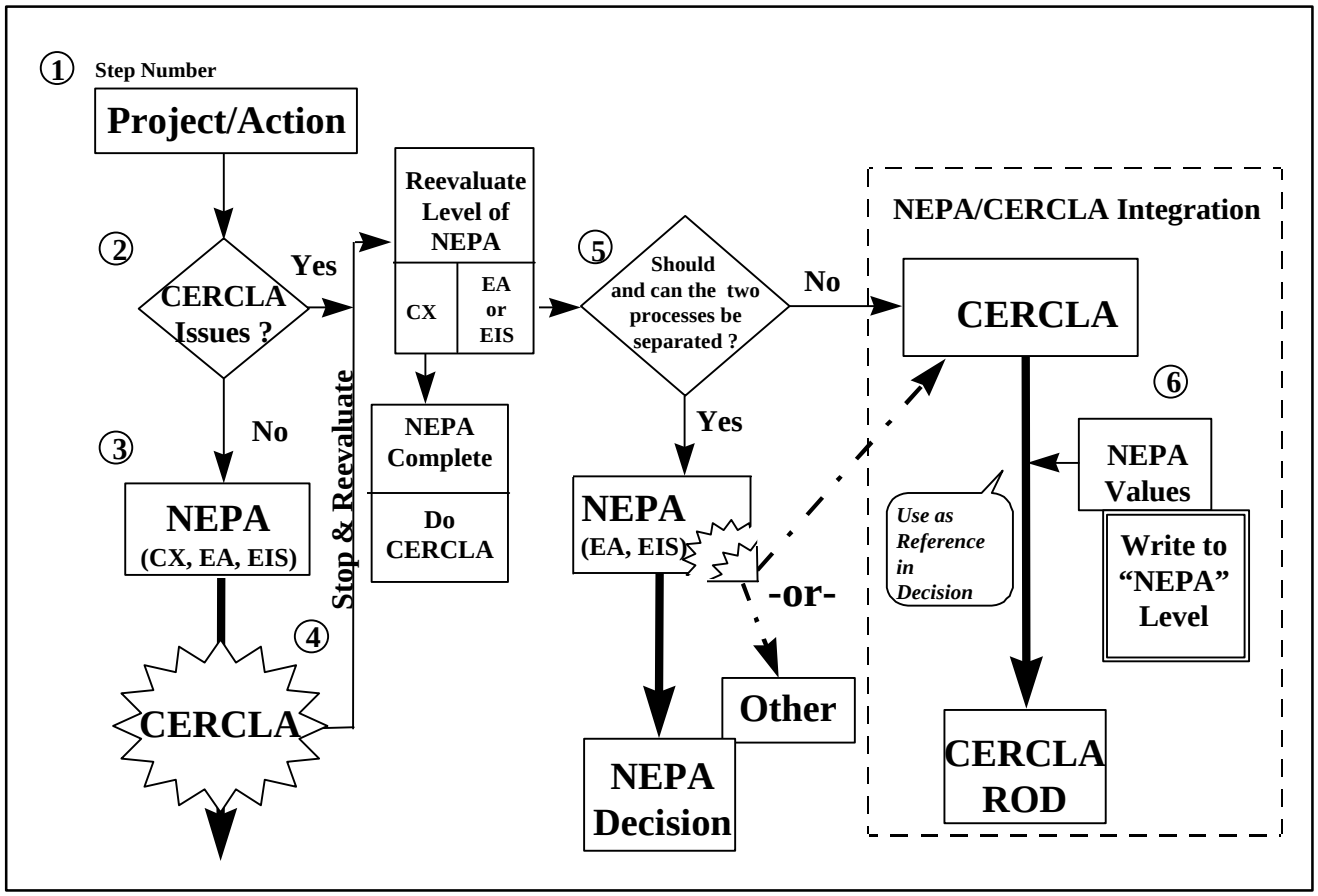

Figure 3 NEPA/CERCLA Integration Process

planning requirement for NEPA would be satisfied and NEPA decisions and commitments would be identified early. The NEPA VIA concept would not preclude future CERCLA remediation decisions and conflicts from inter/intra regulatory agency reviews and approvals would be minimized.

Eliminating Redundant Public Interactions

The inclusion of an approved NEPA VIA as a referenceable document to the CERCLA documentation reduces the need for public interaction to only one time, saving about half the normal NEPA time and cost required.

Focusing Human Health and Ecological Risk Assessments

The committee evaluated risk calculations and impact assessment criteria for NEPA and CERCLA documentation and found differences between the two processes which could cause conflicts and interpretation problems for both the public and regulators. It was the committee's opinion that the best guidance is that where CERCLA is clearly the driver, calculate and provide CERCLA risk values for impact assessment. The human health or ecological risk assessment provided under CERCLA will satisfy NEPA risk assessment requirements. Table 1 presents a comparison of risk assessment between CERCLA and NEPA and is provided as guidance in defining terms and understanding risk from each regulation's perspective. WSRC (1996) outlines the Risk Assessment process for the

WSRC Environmental Restoration Program and is an excellent guide to the details of the SRS RCRA/CERCLA Process.

For perspective, "risk" can take on a wide variation of meanings within the assessment of human health and ecological impacts presented in NEPA documents (Table 1). Although risk is sometimes used to indicate a general statement of concern, hazard, or danger, the term can also denote uncertainty, or even effects themselves, often with a quantitative presentation (DOE, 1993). In general, risk is most often used as a quantitative or qualitative estimate of the probability that a negative impact will take place at some estimated frequency or rate of occurrence. Pursuant to guidance from the DOE Office of NEPA Oversight, when "risk" is used in either an EA or EIS, that term must be specifically defined based on the context in which it is used in the analyses and assessments presented in those documents.

"Risk assessment" is the qualitative or quantitative evaluation performed in an effort to define the risk posed to human health and/or the environment by the presence or potential presence and/or use of specific chemical or radiological pollutants. Although the details of any one risk assessment would vary with the specific action being evaluated, the overall process is basically the same. The steps of this process are as follows:

- Based on the scope of the proposed action and alternatives, it is determined what air emissions, liquid discharges, or radiation exposures would occur during either normal operations or accident scenarios.
- The quantities of constituents being analyzed are determined using either known or estimated data. The release or exposure time period would be determined using either known or estimated data. The release or exposure time period would be determined for either operational or accident scenarios. All possible routes of exposure should be considered during this phase of the assessment.

- In most instances, given the amount of material being evaluated over a certain time frame, a model (e.g., MAXIGASP, RADTRAN-4) is used to determine the impact quantitatively; however, this is not required under NEPA regulations.

- The impacts resulting from the assessment are then put in terms which are readily understandable by the general public (e.g., dose should be converted to excess latent fatal cancers within a population).

- The impact is then correlated with the frequency of occurrence to calculate the risk associated with a proposed action or the alternatives.

The primary problem with conducting risk assessments for NEPA documents is that such analyses must be conducted early in the project life cycle. In many instances, little data exist which could be used to determine the impacts which would result from either the proposed action or one of the alternatives. In those cases, the data must be estimated as accurately as possible. To account for this uncertainty, the maximum estimated quantities of materials being evaluated are used to produce bounding scenarios. In doing so, it is assumed that the actual numbers will be less than those used in the assessment.

Table 1

Comparison of CERCLA and NEPA Human Health and Ecological Risk Assessment Processes

Item	CERCLA	NEPA
Definition of Risk	• Defined specifically in risk assessment guidance issued by EPA for human health (EPA, 1991) and ecological (EPA, 1992)	• Can take on a variety of meanings. Guidance from DOE-HQ (DOE, 1993) states that "risk" should be defined when using the term and the context should be provided for its use in an EA or EIS.
Justification	• Risk assessment is mandated by CERCLA and the National Contingency Plan	• Risk assessments are used in NEPA documents as appropriate to evaluate potential impacts to human health and the environment.
Utilization	• Risk assessments are used to support Remedial Investigations/Feasibility Studies	• Risk assessments are used to support evaluations conducted during a NEPA analysis of a proposed action and its alternatives.
Types of Risk Assessments	• Preliminary screening or baseline	• Variable depending upon the "sliding scale approach" defined in DOE (1993)
Conceptual Model	• Required for both human health and ecological	• Use of models as appropriate
Data Requirements	• Quantitative analytical data for soil, sediment, surface water, and groundwater	• Data used may be actual/estimated or qualitative/quantitative dependent upon availability and/or applicability; where no data exist, maximum or bounding data may be estimated for use in assessments, or a discussion regarding the incomplete or unavailable information is provided in the EA or EIS.

Table 1

Comparison of CERCLA and NEPA Human Health and Ecological Risk Assessment Processes (Cont'd)

Item	CERCLA	NEPA
Purpose	• To characterize the current and potential threats to human health and the environment	• To identify and evaluate potential impacts to human health and the environment which might result from implementing a proposed action or its alternatives
Model Protocols	• Issued by EPA and specific to human health and ecological	• Generally defined in DOE-HQ guidance documents
Constituents of Potential Concern	• Required and identified through screening protocols	• Identified through the scoping process and during development of the impact assessment process
Study Area	• For ecological risk, the study area is defined as the ecosystem potentially at risk	• Defined as the Affected Environment; this may vary depending upon the potentially affected environmental component in question.
Endpoints	• Required	• Implicitly required as the resource potentially being impacted
Characterization of Exposure	• Required for chemical, biological, and physical stressors	• As appropriate to support the assessment
Characterization of Effects	• Required for humans and receptor species	• Required to form the basis for comparison of the alternatives
Risk Characterization	• Required and relates the probability of exposure to the probability of adverse effects	• Implicitly required to evaluate and compare the impacts of the alternatives
Uncertainty	• Required to quantify reliability of data and conclusions	• Must be identified and discussed as appropriate

Table 1

Comparison of CERCLA and NEPA Human Health and Ecological Risk Assessment Processes (Cont'd)

Item	CERCLA	NEPA
Dose/Risk (Human Health)	• Risk calculated directly using slope factors for each radionuclide	• Dose calculated using dose conversion factors (DCFs) and then converted to risk
	• Best estimate of age - averaged lifetime excess total cancer risk	• 50-year committed dose
	• Cancer incidence during lifetime of individual	• ICRP 60 risk conversion factor for fatal cancers
Dose (Ecological)	• Models designed specifically for individual species	• Impact assessment developed for individual species
Public involvement	• Required	• Required

Cooperative Data Collection

Data collection activities should be amply funded, timed properly to reduce redundancy, and be conducted under an appropriate quality assurance program so as to satisfy the requirements of both NEPA and CERCLA regulations.

Sampling programs under NEPA are broadly focused toward the objective of predicting and evaluating all impacts associated with an action, whether those impacts are physical (i.e., landscape disturbance, hydrologic, meteorological, etc.) or chemical (e.g., eutrophication, release of hazardous chemical, etc.) in nature. Quality assurance requirements associated with NEPA assessments are also general, in that it is expected that sampling and analysis be conducted by qualified individuals under a documented and appropriate quality assurance/quality control program.

CERCLA, in contrast, is relatively tightly focused on assessing the risks associated with the release of a limited suite of chemical constituents and their effects on human and ecological receptors. Furthermore, CERCLA has well defined protocols for assessing risk to these receptors; these protocols contain specified parameters for which changes must be negotiated with regulators prior to implementation. In the case of human receptors, exposure scenarios are defined with a single receptor. In the case of ecological receptors,

exposure scenarios and receptor species are selected by the investigators as those that are most appropriate to the condition being assessed.
Natural resources damage assessment requirements under CERCLA should be evaluated early in any sampling program and coordinated with any NEPA planned sampling so that appropriate natural resources/ecological information can be gathered simultaneously.

Where both CERCLA and NEPA assessments must be developed to evaluate an action, CERCLA sampling and analysis protocols should be followed for chemical analyses. While many of the CERCLA prescribed chemical sampling and analysis approaches could be advisable for NEPA actions, they can add considerable expense to projects and do not necessarily add value to a well thought-out and executed program for NEPA characterization. The key decision point is whether RCRA/CERCLA hazardous constituents are involved.

In both cases, a conceptual model for potential impacts can, and should, be developed. The CERCLA associated aspects of the conceptual model will represent a subset of the overall NEPA activity. In association with the conceptual model, the Data Quality Objective (DQO) Process should be followed to determine the actual data requirements for the project, the detection limits, and in the case of the CERCLA assessment, the specific quality assurance/quality control approaches that must be followed. It must be noted at this point that the SRS has historically been highly-restrictive in CERCLA data requirements; the CERCLA process does not require that all data utilized in the evaluation be fully validated, but rather allows for the use of data collected by scoping level techniques and other special approaches. All such data should be verified by a certain percentage (e.g., 10 percent) of samples that are submitted through more rigorous CERCLA protocols.

Actual sampling requirements are specified through development of the conceptual model of facility/action impacts, while specific data quality requirements are identified through the DQO process. In cases where both CERCLA and NEPA requirements must be met, sampling to meet NEPA requirements should also provide samples for current or anticipated CERCLA processes. Front end planning and funding to ensure proper sample Chain-of-Custody and Laboratory Quality requirements for the defined portion of samples following this path will minimize costs for resampling to support the additional requirements.

VII. CONCLUSIONS

A vast majority of the CERCLA actions involving environmental restoration have been categorically excluded under NEPA, however, some may require integrated NEPA evaluation. The integration of NEPA values into CERCLA documentation is anticipated to occur: (1) at the CERCLA Work Plan development stage when multiple waste units are being considered together under CERCLA; (2) when facilities are being considered for Decontamination and Decommissioning (D&D); (3) where there may be a potential CERCLA implication at a selected waste site (e.g., L-Lake drawdown with the shutdown of the Site's river water system); and (4) when proposed Remedial Actions differ from those evaluated in existing NEPA documents.

This NEPA/CERCLA Integration Guidance provides for an early project planning and scoping process during which appropriate NEPA/CERCLA questions are asked in a decision-based flow process. This guidance outlines an integrated document that would meet both NEPA and CERCLA requirements where CERCLA is clearly the driver. The NEPA Values Impact Assessment integrated referenceable document would reduce costs significantly by eliminating the need to prepare an EA or EIS for major CERCLA actions by demonstrating that NEPA values have been addressed.

SRS developed a more efficient and cost effective approach to integrating NEPA and CERCLA processes that minimizes conflicts. Following this guidance would decrease scheduling and funding conflicts, eliminate redundant public involvement, set specific definitions and goals for human health and ecological assessments, and allow for cooperative data collection which would significantly reduce time and costs of document development and satisfy the regulatory requirements of both laws.

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APPENDIX A

History of SRS NEPA/CERCLA Integration Experience

Shedrow et al. (1993) developed a program plan which presented strategies for integrating requirements of NEPA and RCRA/CERCLA programs for remedial actions at SRS. Dyer et al. (1994) developed a strategy for integrating national resource damage concerns into the CERCLA RI/FS process.

Site NEPA and CERCLA staffs (DOE-ERD, EAD; WSRC-EPD, EREC, SRTC; HNUS, PRC, and BSRI) met in February 1997 to discuss the most efficient and cost-effective ways to integrate the Site's NEPA and CERCLA processes with minimum conflicts. Discussions centered around integrating NEPA values into CERCLA documents where CERCLA is clearly the driver. The team looked at the following in the integrated feasibility process:

- Gaining an understanding of both processes
- Defining the regulatory drivers
- Evaluating cooperative data collection needs
- Eliminating public interaction redundancy
- Resolving scheduling and funding conflicts
- Identifying risk assessment differences
- Evaluating approaches to document integration
- Reviewing recent SRS attempts to integrate the two processes at SRS

A task team was then designated to streamline the integration process by developing an early planning and scoping process, which included asking the appropriate NEPA/CERCLA questions at the right stage in the process and outlining an integrated document that would be acceptable to regulatory reviewers and meet compliance requirements of both laws.

Recently, DOE committed to coordinating NEPA actions being considered in the "Shutdown of the River Water System at the Savannah River Site" EIS (DOE, 1997) with SRS remediation activities planned and conducted in accordance with CERCLA under the FFA. The regulators proposed to initiate discussions to determine reasonable means of expediting the FFA process to achieve appropriate coordination of the RODs.

As a first measure to expedite the FFA process, DOE compared data on L-Lake contamination used to support the NEPA analyses presented in the EIS with criteria used under the FFA for Site Evaluations. This process was to decide if additional characterization was needed (i.e., to determine if the site should be included on the RCRA/CERCLA Operable Units List in Appendix C of the FFA). DOE proposed further assessment of L-Lake under the FFA and bypassed preparation and review of a Site Evaluation Report. DOE agreed with EPA, based on their comments on the EIS (DOE, 1997), that available data were sufficient to expedite the FFA process for scoping additional studies to characterize and, if necessary, remediate L-Lake.

DOE coordinated this NEPA action with FFA activities by ensuring that data obtained in the context of NEPA evaluations were appropriately utilized in FFA activities. In addition, DOE ensured that its operational decisions regarding the river water system made as the basis of the EIS were consistent with potential remedial decisions for L-Lake that may be made under the FFA, as demonstrated by the analysis presented in the EIS and by the fact that its preferred action in this EIS preserves the option of refilling the lake in the event that such action is determined to be necessary under the FFA. Further, should DOE select a shutdown alternative in the EIS, DOE would implement measures to limit potential risk from contaminated lake sediments that would be exposed as lake drawdown occurred. These actions could include implementing institutional and/or administrative access controls, monitoring exposures to workers and visitors, implementing measures to control erosion of exposed lake sediments by wind and water, and surveying and monitoring of exposed sediment to further characterize the area and to ensure risk levels are at or below predicted levels.

DOE proposed that these and other potential measures to coordinate the NEPA EIS process be considered in the context of ongoing discussions being conducted under the FFA. This provides the appropriate framework for planning L-Lake remediation with consideration of such important factors as risk to human health and the environment, budgeting, and scheduling.

APPENDIX B

Typical CERCLA Action to Determine the Need for NEPA/CERCLA Integration.

Example - P-Reactor Seepage Basin Vegetation Removal (CX)

Step 1 Define the proposed action/project in as much detail as possible, including potential impacts.

ER proposes to conduct Removal Action under the FFA at the P-Reactor Seepage Basins. The Early Removal Action will include removal of vegetation contaminated with Radionuclides absorbed from the soils at the basins. Vegetation will be removed from within the fenced area of the basins. Affected basins are 904-61G, -62G, -63G which are located to the west (plant) of the P-Reactor building, outside the protected area. The basins are further located to the west of an unpaved road, Road B-5, adjacent to the 904-86G Basin. This activity is being performed to reduce the risk to human health and the environment from the release or threat of release of a hazardous substance and to also reduce the potential spread of contamination.

Step 2 ANSWER the Questions:

- Is the proposed action (or any alternatives) a CERCLA action or a remedial action under CERCLA? *Yes*
- Does the proposed action (or any alternatives) affect (directly or indirectly) any known waste unit or Site Evaluation (SE) area? *Yes*
- Is the unit listed on the FFA? *Yes*
- Has this unit received, or believed to have received, releases of hazardous substances from a facility? *Yes*
- Has there ever been a release or suspended release of hazardous materials from the area under consideration for action? *Yes*
- Will the proposed action (or any alternatives) change exposure pathways at a CERCLA site(s)? *No*
- Is the proposed action a D&D action? *No*
- Does the action take place where a waste unit or SE area remedial action took place? *No*
- Would any likely NEPA commitments or MAP affect (directly or indirectly) any CERCLA site(s)? *N/A*

Step 3 If all the answers are "no", there are no CERCLA issues and therefore, no need for NEPA/CERCLA integration. Proceed with the NEPA process:

- Fill out Environmental Evaluation Checklist per 3Q 5.1.
- Make NEPA determination (CX, EA, or EIS).
- Prepare NEPA documentation.
- Receive NONA.

If any answers is "yes", indicating clear CERCLA involvement, there is potential for NEPA/CERCLA integration. *Yes*

Proceed with NEPA process as above. *The NEPA determination is a CX, (B6.1), receive NONA and NEPA process is complete.*